

AMENDMENTS TO THE CLAIMS

Following is a listing of all claims in the present application, which listing supersedes all previously presented claims:

Listing of Claims:

1. (Currently Amended) A method for recognizing a pattern of an alignment mark on a wafer, the method comprising:

providing the wafer into a measurement apparatus;

capturing image data corresponding to a first alignment mark region of the wafer;

determining a shape of the alignment mark within the first alignment mark region;

~~The method for recognizing a pattern of an alignment mark on a wafer as claimed in claim 4, further comprising:~~

deleting a subset of the captured image data that corresponds to a portion of the first alignment mark region that surrounds the alignment mark;

extracting an alignment mark pattern by a pattern recognition of the captured image data; and

establishing the extracted alignment mark pattern as a reference mark,

wherein the pattern recognition is performed on a subset of the captured image data corresponding to the shape of the alignment mark.

2. (Currently Amended) The method for recognizing a pattern of an alignment mark on a wafer as claimed in claim 1, further comprising:

recognizing a related alignment mark pattern in a second alignment mark region of the wafer at a first magnification, the second alignment mark region including the first alignment mark region and at least one related alignment mark disposed outside the first alignment mark region;

wherein the captured image data corresponding to the first alignment mark region is ~~is~~ captured at ~~at~~ ~~about~~ four or more times the first magnification.

3-4. (Cancelled).

5. (Currently Amended) The method for recognizing a pattern of an alignment mark on a wafer as claimed in claim 1, wherein the image data is ~~is~~ captured by the measurement apparatus that includes a controlling member.

6. (Cancelled).

7. (Previously Presented) The method for recognizing a pattern of an alignment mark on a wafer as claimed in claim 5, wherein the controlling member controls a driving member to adjust alignment of the wafer in accordance with the pattern recognition.

8. (Currently Amended) The method for recognizing a pattern of an alignment mark on a wafer as claimed in claim 1, wherein the image data is ~~is~~ captured with a CCD sensor.

9. (Previously Presented) The method for recognizing a pattern of an alignment mark on a wafer as claimed in claim 8, wherein the CCD sensor transforms incident light with a photoelectric conversion method into two-dimensional gray level image data.

10. (Previously Presented) The method for recognizing a pattern of an alignment mark on a wafer as claimed in claim 1, wherein:

the first alignment mark region is a box region that includes the alignment mark, and
the deleted subset of image data includes data corresponding to two or more discontinuous portions of the box region.

11. (Previously Presented) The method for recognizing a pattern of an alignment mark on a wafer as claimed in claim 1, wherein:

the alignment mark has a window frame shape that encloses one or more non-mark regions, and

the deleted subset of image data includes data corresponding to the one or more non-mark regions.

12. (Previously Presented) The method for recognizing a pattern of an alignment mark on a wafer as claimed in claim 1, wherein the alignment mark has a cross shape, and

the deleted subset of image data corresponds to a continuous region that encloses the cross shape.

13-18. (Cancelled).

19. (Currently Amended) The method for recognizing a pattern of an alignment mark on a wafer as claimed in claim 1 [[4]], wherein the subset of the captured image data corresponds to a window frame shape.

20. (Currently Amended) The method for recognizing a pattern of an alignment mark on a wafer as claimed in claim 1 [[4]], wherein the subset of the captured image data corresponds a cross shape.

21. (Previously Presented) The method for recognizing a pattern of an alignment mark on a wafer as claimed in claim 2, wherein data corresponding to the at least one related alignment mark is not used in the pattern recognition.

22. (Previously Presented) The method for recognizing a pattern of an alignment mark on a wafer as claimed in claim 12, wherein the continuous region has a continuous outer perimeter having a first shape and a continuous inner perimeter having a second shape, wherein the second shape is different from the first shape.